

Remarks/Arguments

Claim Summary

Claims 1, 4, 6 and 9 are amended.

Claim 1-13 are currently pending in the application.

Claim Rejections - 35 USC § 102

Claims 1-2 were rejected under 35 U.S.C. §102(b) as being anticipated by Hama et al., US Patent 5,792,261.

A claim is anticipated “if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP 2131. If the cited reference fails to either expressly or inherently describe *each and every limitation* of a claim, then the cited reference does not anticipate the claim.

The Examiner alleges on page 2 of the “Detailed Action” that Hama et al discloses:

“a segregation wall part 14 having a portion made of quartz ceramic [*sic*] material opposite to the etch chamber that is a ceiling wall of the etch chamber, and having a portion made of quartz material opposite to the plasma chamber...”

Amended claim 1 of the present application recites in part, “a segregation wall part having a portion made of ceramic opposite to the etch chamber, and having a portion made of quartz opposite to the plasma chamber.” Hama et al. discloses a “partitioned plate 14 made of [a single]

dielectric material such as quartz.” Column 3, line 66. In other words, Hama et al. only discloses the use of a quartz partitioned plate 14, similar to the apparatus disclosed by the Applicants in the Background section of the present application on page 1, paragraph [0020].

Hama et al. fails to teach an inductive coupling plasma etching apparatus having “a segregation wall part having a portion made of ceramic opposite to the etch chamber, and having a portion made of quartz opposite to the plasma chamber;” therefore, claim 1 and claim 2 define over Hama et al.

Claims 1-3, 6, and 9-11 were rejected under 35 U.S.C. §102(b) as being anticipated by Ni et al., US Patent 6,388,383.

The Examiner alleges on page 3 of the “Detailed Action” that Ni et al. discloses:

“a segregation wall part 34 having a portion made of quartz ceramic [*sic*] material opposite to the etch chamber that is a ceiling wall of the etch chamber, and having a portion made of quartz material opposite to the plasma chamber...”

Similar to Hama et al. and the Applicants’ background disclosure, Ni et al. discloses that a base 34 is made of a single dielectric material, e.g., quartz. Column 2, lines 56 - 58.

Ni et al. fails to teach an inductive coupling plasma etching apparatus having “a segregation wall part having a portion made of ceramic opposite to the etch chamber, and having a portion made of quartz opposite to the plasma chamber;” therefore, claim 1 and claims 2-3, which depend on base claim 1, define over Ni et al. In addition, independent claims claim 6, claim 9, and

dependent claims 10-11, which depend on base claim 9, also define over Ni et al., because independent claims 6 and 9 recite a segregation wall having quartz and ceramic portions.

Claims 1-2 were rejected under 35 U.S.C. §102(b) as being anticipated by Collison et al, US Patent 6,203,657.

The Examiner alleges on page 3 of the “Detailed Action” that Collison et al. discloses:

“a segregation wall part 206 having a portion made of quartz ceramic [*sic*] material opposite to the etch chamber that is a ceiling wall of the etch chamber, and having a portion made of quartz material opposite to the plasma chamber...”

However, Collison et al. discloses that the plasma containment plate 206 is grounded to attract charged species. Column 6, lines 54 – 57. A material that is grounded means that the material must be *necessarily conductive*. Therefore, Collison et al. fails to teach an inductive coupling plasma etching apparatus having “a segregation wall part having a portion made of ceramic opposite to the etch chamber, and having a portion made of quartz opposite to the plasma chamber;” therefore, claim 1 and claim 2 define over Collison et al.

The Applicants note that the Examiner has failed to address the Applicants argument in response to Collison et al. in the Examiner’s Final Office Action.

Claim Rejections - 35 USC § 103(a)

Claims 3, 6, and 9-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hama et al; Claims 3, 6, and 9-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Collison et al; claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Collison et al in view of Li et al; Claims 7 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Collison et al in view of Li et al; and Claims 1-3, 5-6, and 8-11, and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yin et al. in view of Collison et al.

The Applicants respectfully traverse the rejections under 35 U.S.C. 103(a) for at least the same reasons as discussed above in connection with the Examiner's §102(b) rejection.

Response to Arguments

In the response to the Applicants' argument filed on 12/12/04, the Examiner alleges that Hama et al., Ni et al., and Collison et al. discloses "that both portion opposite to the etch chamber and the portion opposite to the plasma chamber are made of quartz which is a ceramic material."

The Applicants respectfully disagree with the Examiner's definition of quartz and ceramic, and the Examiner's reasons for rejecting the claims.

While it is true that some type of ceramics contain quartz, it is not necessary that quartz be a material of ceramic. In other words, quartz and ceramics are two distinct materials.

The following are the common definition of quartz and ceramics:

Quartz, one of the commonest of all rock-forming minerals and one of the most important constituents of the earth's crust. Chemically, it is silicon dioxide, **SiO₂**. It occurs **in crystals of the hexagonal system**, commonly having the form of a six-sided prism terminating in a six-sided pyramid; the crystals are often distorted and twins are common. Quartz may be **transparent**, translucent, or opaque; it may be colorless or colored.

Ceramics, materials made of nonmetallic minerals that have been **permanently hardened by firing at a high temperature**, or objects made of such materials. Most ceramics resist heat and chemicals and are poor conductors of heat and electricity. Traditional ceramics are made of clay and other natural occurring materials, while modern high-tech ceramics use **silicon carbide, alumina, and other specially purified or synthetic raw materials**. Ceramic materials are used in all forms of pottery, from crude earthenware to the finest porcelain, and in industrial and engineering products. Ceramic products include cookware and dinnerware; art objects, such as figurines; building materials, such as brick; abrasives, such as alumina, and specialized cutting tools; electrical equipment, such as insulators in spark plugs; refractories, such as firebrick and the heat shield on the space shuttle; and artificial bones and medical devices.

The Applicants draw the Examiner attention to the definition of quartz and ceramics given on page 6, paragraph [0125] of the present application. The specification defines quartz and ceramic as different materials with different properties and different characteristics.

Accordingly, claims 1, 4, 6 and 9 have been amended to distinctively define over the cited reference by reciting that one side of a segregation wall is ceramic and the other side is quartz. Support can be found on page 5, paragraph [0110] to page 6, paragraph [0125].

Accordingly, *arguendo*, even if quartz is a ceramic material, the Examiner's §§102 and 103(a) rejections are incorrect. If is the Examiner's opinion that quartz is a species which defines a genus (ceramic), then the Examiner's is wrong.

Applicants submit that although quartz **may be** a starting material of ceramic, quartz is not a ceramic. Applicants are not aware of any technical resources, which define quartz as a ceramic. Therefore, claims which distinctively define a wall being ceramic on one side and quartz on the other, distinctively recites two separate elements. In other words, the ceramic of the claims do not contain quartz. Page 6, paragraph [0125]

For at least the reasons stated above, Applicants content that claims 1-13 define over Hama et al. and Collison et al., taken individually or in combination with the remaining references of record.

Conclusion

No other issues are remaining, reconsideration and favorable action upon claims 1-13 now present in the application are requested.

Respectfully submitted,

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